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1623

PATENT

Docket No.: 19603/3431 (CRF D-2585A)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Harman et al.

Serial No. : 09/927,984

Cnfrm. No. : 5985

Filed : August 10, 2001

For : PRODUCTION AND USE OF INDUCIBLE
ENZYMES FROM TRICHODERMA AND
BACTERIA FOR CONTROL OF PLANT
PESTS AND FOR INDUSTRIAL PROCESSESExaminer:
UnknownArt Unit:
1623U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, Virginia 22202

Dear Sir:

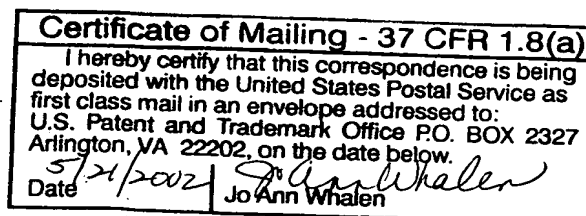
Transmitted herewith in the above-identified application are:

- ☒ Information Disclosure Statement Under 37 C.F.R. §§ 1.97-1.98 (1 page);
- ☒ PTO-1449 (4 pages)(in duplicate) and 32 references; and
- ☒ Copy of International Search Report for the corresponding PCT application.

A duplicate copy of this sheet is enclosed.

Date:

May 21, 2002

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INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§ 1.97-1.98

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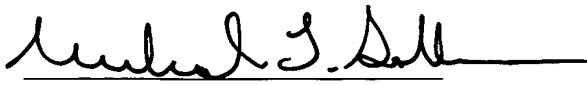
Dear Sir:

Pursuant to 37 CFR §§ 1.97-1.98, applicants hereby bring to the attention of the United States Patent and Trademark Office, the enclosed references listed on the attached PTO-1449 form. References 5, 16, and 17 were cited in the International Search Report (copy enclosed) for the corresponding PCT application.

Pursuant to 37 CFR § 1.97(b)(3), no fee is required. Should it be determined that a fee is required, the Commissioner is authorized to charge any additional fee to deposit account no. 14-1138.


Respectfully submitted,

Date: May 21, 2002


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: U.S. Patent and Trademark Office P.O. BOX 2327 Arlington, VA 22202, on the date below.	
Date	<u>5/21/2002</u>  JoAnn Whalen

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use several sheets if necessary) (PTO-1449)	ATTY. DOCKET NO.	SERIAL NO.
	19603/3431 (CRF D-2716A)	09/927,984
	APPLICANT	
	Harman et al.	
	FILING DATE	GROUP ART UNIT
	August 10, 2001	1623

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE
	1	5,173,419	12/22/1992	Harman et al.		
	2	5,326,561	07/05/1994	Harman et al.		
	3	5,433,947	07/18/1995	Harman et al.		
	4	6,069,299	05/30/2000	Broadway et al.		
	5	5,474,926	12/12/1995	Harman et al.		
	6	6,251,390 B1	06/26/2001	Harman et al.		
	7	5,378,821	01/03/1995	Harman et al.		
	8	5,165,928	11/24/1992	Smith et al.		

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DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

	9	Galante et al., "Application of <i>Trichoderma</i> Enzymes in the Textile Industry." in Harman, G. E. and Kubicek, C. P. (eds.): <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol. 2:311-325 (1998)
	10	Galante et al., "Applications of <i>Trichoderma</i> Enzymes in the Food and Feed Industries." in Harman, G. E. and Kubicek, C. P. (eds.): <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol. 2:327-342 (1998)
	11	Buchert et al., "Applications of <i>Trichoderma reesei</i> Enzymes in the Pulp and Paper Industry." in Harman, G. E. and Kubicek, C. P. (eds.): <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol. 2:343-363 (1998)
	12	Koivula et al., "Structure-Function Relationships in <i>Trichoderma</i> Cellulolytic Enzymes," in Harman, G. E. and Kubicek, C. P. (eds.), <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol. 2:3-23 (1998)
	13	Lorito, "Chitinolytic Enzymes and Their Genes," in Harman, G. E. and Kubicek, C. P. (eds.), <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol 2:73-99 (1998)
EXAMINER		DATE CONSIDERED
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		

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	14	Benítez et al., "Glucanolytic and Other Enzymes and Their Control," in Harman, G. E. and Kubicek, C. P. (eds.) <u>Trichoderma and Gliocladium</u> , London: Taylor and Francis, Vol. 2:101-127 (1998)
	15	Broadway et al., "Partial Characterization of Chitinolytic Enzymes from <i>Streptomyces albidoflavus</i> ," <u>Lett. Appl. Microbiol.</u> , 20:271-276 (1995)
	16	Carsolio et al., "Characterization of <i>ech-42</i> , a <i>Trichoderma harzianum</i> Endochitinase Gene Expressed During Mycoparasitism," <u>Proc. Natl. Acad. Sci. USA</u> 91:10903-10907 (1994)
	17	Garcia et al., "Cloning and Characterization of a Chitinase (CHIT42) cDNA from the Mycoparasitic Fungus <i>Trichoderma harzianum</i> ," <u>Curr. Genet.</u> 27:83-89 (1994)
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	20	Lorito et al., "Mycoparasitic Interaction Relieves Binding of the Cre1 Carbon Catabolite Repressor Protein to Promoter Sequences of the <i>ech42</i> (Endochitinase-Encoding) Gene in <i>Trichoderma harzianum</i> ," <u>Proc. Natl. Acad. Sci. USA</u> 93:14868-14872 (1996)
	21	Mach et al., "Expression of Two Major Chitinase Genes of <i>Trichoderma atroviride</i> (<i>T. harzianum</i> P1) is Triggered by Different Regulatory Signals," <u>Appl. Environ. Microbiol.</u> 65(5):1858-1863 (1999)

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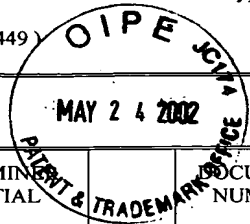
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22	Zeilinger et al., "Chitinase Gene Expression During Mycoparasitic Interaction of <i>Trichoderma harzianum</i> with its Host," <u>Fungal Genet. Biol.</u> 26:131-140 (1999)
23	Harman, G.E., "The Myths and Dogmas of Biocontrol. Changes in Perceptions Derived from Research on <i>Trichoderma harzianum</i> T-22," <u>Plant Dis.</u> 84:373-393 (2000)
24	Lorito et al., "Potential of Genes and Gene Products from <i>Trichoderma</i> sp. and <i>Gliocladium</i> sp. for the Development of Biological Pesticides," <u>Molec. Biotechnol.</u> 2:209-217 (1994)
25	Harman et al., "Chitinolytic Enzymes of <i>Trichoderma harzianum</i> : Purification of Chitobiosidase and Endochitinase," <u>Phytopathology</u> 83(3): 313-318 (1993)
26	Mäntylä et al., "Industrial Mutants and Recombinant Strains of <i>Trichoderma reesei</i> ," in Harman and Kubicek (eds.): <i>Trichoderma and Gliocladium</i> , Vol. 2. Taylor and Francis, London, pp. 291-309 (1998)
27	Herrera-Estrella et al., "Signals Associated with Control of Gene Expression During Mycoparasitism by <i>T. harzianum</i> ," <u>Helsinki Trichoderma/Gliocladium Workshop Abstract</u> (1999)
28	Donzelli et al., "Nitrogen Starvation Induces Antifungal Enzyme Synthesis in <i>Trichoderma harzianum</i> ," <u>Phytopathology</u> 90:S20 Abstract (2000)
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29	Harman et al., "Degradation of Chitin Substrates Using Enzymes Proprietary to Cornell University (Licensed to Bioworks, Inc.)," <u>Report to Biopolymer Engineering</u> pp. 1-10 (2001)
30	Donzelli et al., "Interaction of Ammonium, Glucose, and Chitin Regulates the Expression of Cell Wall-Degrading Enzymes in <i>Trichoderma atroviride</i> Strain P1," <u>Applied and Environmental Microbiology</u> 67(12):5643-5647 (2001)
31	Harman et al., "Digestion of Longoustino Shell Chitin with Improved Enzyme Source. A Final Report Addendum," Confidential Biopolymer Report (2001)
32	Harman et al., "Plant Growth Promotion by <i>Trichoderma harzianum</i> ," Helsinki Trichoderma/Gliocladium Workshop Abstract (1999)
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